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ABSTRACT

This study compared the impact of experimental bilingual schools to the impact of regular schools in Guinea-Bissau and Niger. The Guinea-Bissau school used Creole for instruction in the first two grades, then transitioned abruptly to Portuguese in third grade. Nigerian children were taught in one of the five main languages (Hausa, Zarma, Peul, Tamajaq, and Kanuri) in the first three grades. Halfway through second grade, French was introduced orally, and in the three higher grades, it became the language of instruction, while the national language remained as a subject of study. Students from both bilingual and monolingual systems were tested in reading, writing, and math in both languages (official and national). Researchers also conducted classroom observations. Results indicated that in the bilingual schools, there was more dynamic interaction between teachers and students and between students themselves. Teaching was more student-centered. Achievement was higher in bilingual schools for girls than boys and for farmers than civil servants. Results suggested that the earlier schools started teaching the second language, and the later schools introduced the second language as a medium of instruction, the better the students' achievement. Results also indicated that the transition to the official language in bilingual programs should be gradual. (SM)

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Presentation paper 8th Nordic Conference: Bilingual education in West Africa: does it work?

Mart Hovens

1. *Bilingual education in 2 West African countries: does it work?*
2. *What is the impact for girls?*
3. *What is the impact for the children of farmers?*

1. Bilingual education in 2 West African countries: does it work?

1.1 Study set up

The author participated in 2 comparative studies in Guinea-Bissau and in Niger. In both countries we wanted to compare the results of the experimental bilingual schools (EE) with those of the regular system.

The experimental bilingual schools in Guinea-Bissau used the language of wider communication, Creole, as medium of instruction in the first two grades. In grade 3 an abrupt transition to Portuguese was made. In Niger, in the first three grades teaching was in a national language using the five main languages: Hausa, Zarma, Peul, Tamajaq, and Kanuri. Halfway through grade 2 French was introduced orally. In the three higher grades French became the medium of instruction, and the national language remained as a subject of study. The regular system (*Escola Oficial; Ecole Traditionnelle:* EO/ET*)* in Guinea-Bissau and Niger is monolingual in the official language of the country (Portuguese and French, respectively).

Apart from the dependent output factors (results and classroom observations) we included various independent variables like the social origin and sex of the pupils. The total number of tested pupils in Guinea-Bissau was 1215. In Niger we tested 1664 children, divided amongst 36 schools. In addition we observed 163 lessons in Niger.

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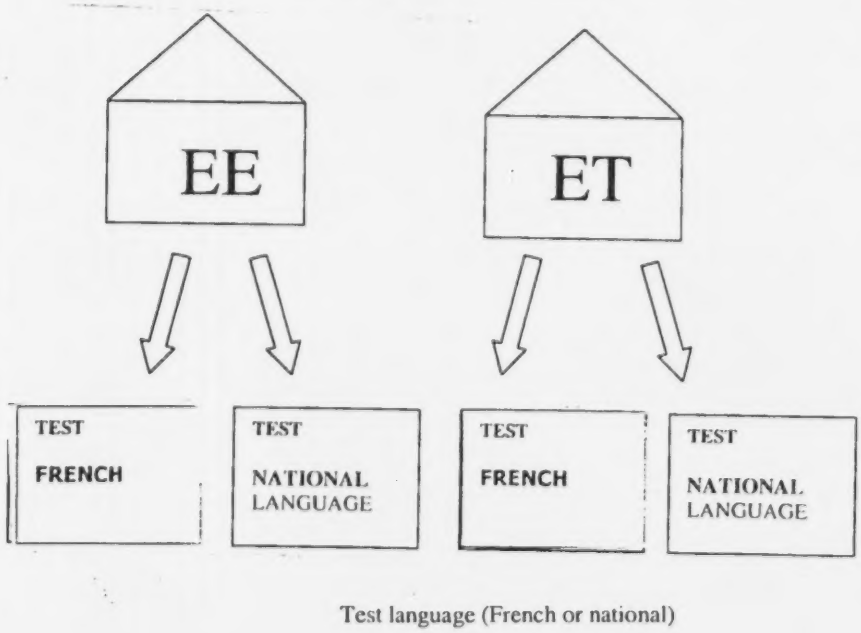
We did our research in a highly complex context. If we want to detect the impact of bilingual education, we have to compare the process of the bilingual system with the regular system. We have to be sure then, that both systems have the same input. Apart from that, we also have to consider the impact of several input factors on the output of the system, both for education as a whole and for each system (ET and EO/ET). We will do this for gender and the socioeconomic situation.

The method was to test pupils from both systems (bilingual and monolingual) in both languages (official and national). In Guinea-Bissau we tested separate classes in each language: the lower grades in Creole, the higher grades in Portuguese. However, in Niger we administered 2 tests to the pupils: one in each language (French and national) per grade in each type of school (EE and ET). The following figure shows how testing was done in Niger:

Testing scheme by school type: experimental education (EE) or traditional education (ET) and testing language (French and national language) in Niger



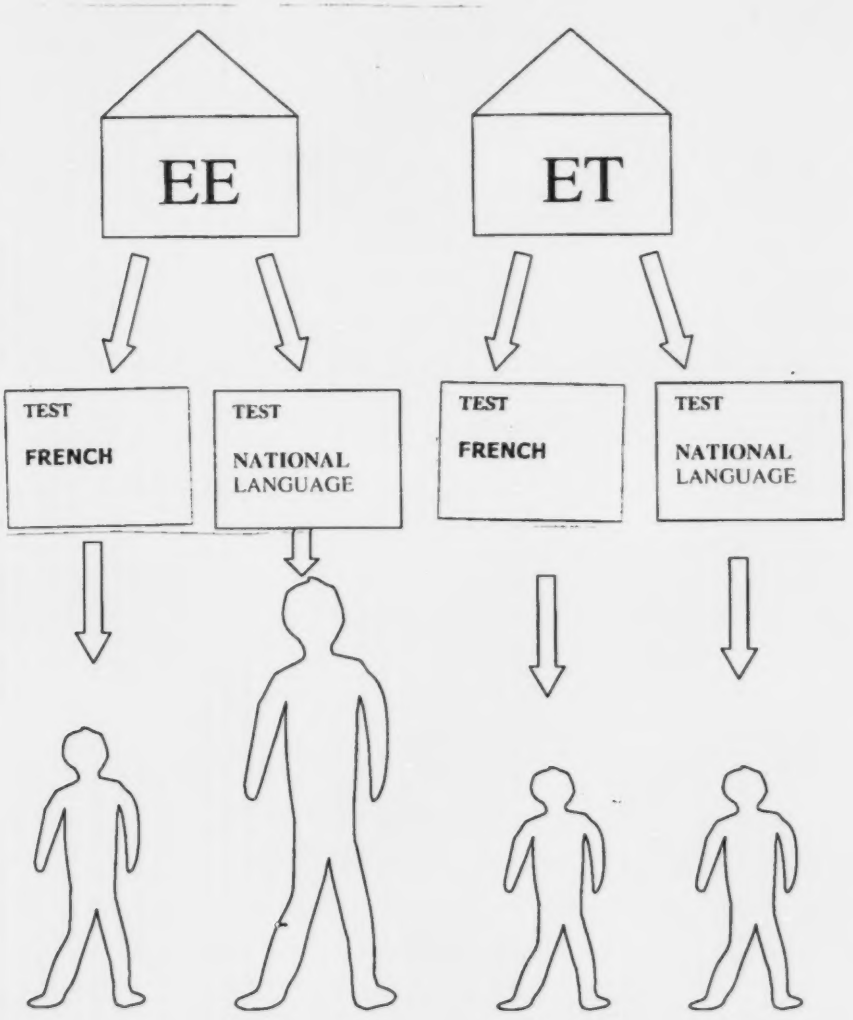
The number of tested pupils was the same in EE- and ET-classes, as was the ratio of girls and boys. The pupils were chosen at random. The teacher was not allowed to influence the choice. In the classes the tests were explained in the language of the test. The teacher himself did not administer the test; this was done by one of our colleagues.

In both Guinea-Bissau and Niger we tested reading, writing and math. We used the same test in Guinea-Bissau for 1st and 2nd grade, and in Niger for 3rd and 4th grade, to be able to see the progress of the pupils. Note that we did not follow a cohort of pupils, but that we tested the pupils in consecutive grades.

1.2 Test results

The figure shows the test model for Niger and the overall result in 3rd grade, the lowest grade that was tested (in the beginning of 4th grade, immediately after the use of the national language as medium of instruction):

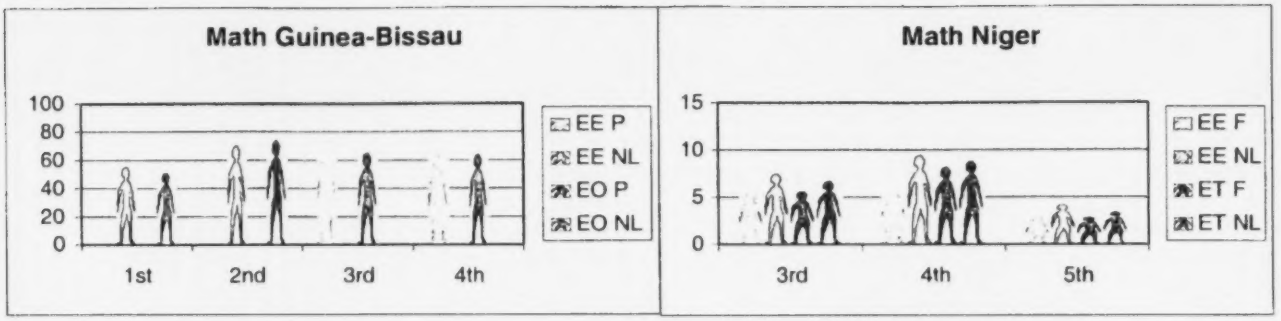
Overall results in grade 3, per school type and testing language, Niger



The size of the human figure represents the mean score of the pupil category. Their colors indicate the different categories. This figure clearly demonstrates the advantage of pupils in the bilingual system, if tested in their national language. It also shows that, if students are tested in French, there is hardly any difference between bilingual and monolingual schools. Let us now look at the results of the different tests.

1.1.1 Math

Math test results in Guinea-Bissau (points out of 100) *and Niger* (points out of 29) *per school type, testing language and grade*



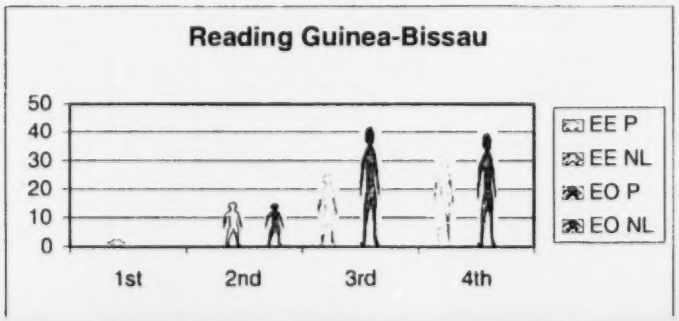
In Guinea-Bissau we do not see much differences between the categories. After the transition to the Portuguese teaching language, in 3rd grade, the EE (bilingual) pupils perform better. We also did counting exercises and figure identification in the lower grades. Here too, EE-pupils outdo their EO (monolingual) peers. Education in Creole has a certain positive impact in GB. The influence of the test language cannot be measured, because it is used in different grades.

In Niger, like in Guinea-Bissau, there is no big difference to be found between the two types of education. The main difference lies in the use of the testing language. All pupils (EE and ET) who are tested in their own languages perform significantly better than those tested in French. This is everyone's experience: one counts and calculates better in his own language.

1.1.2 Language

It is on language tests that we find the most interesting differences, particularly in the 4th grade (testing 3rd grade level) at the point immediately following the period of instruction in the national language.

Reading test results in Guinea-Bissau (points out of 80) *per school type, testing language and grade*



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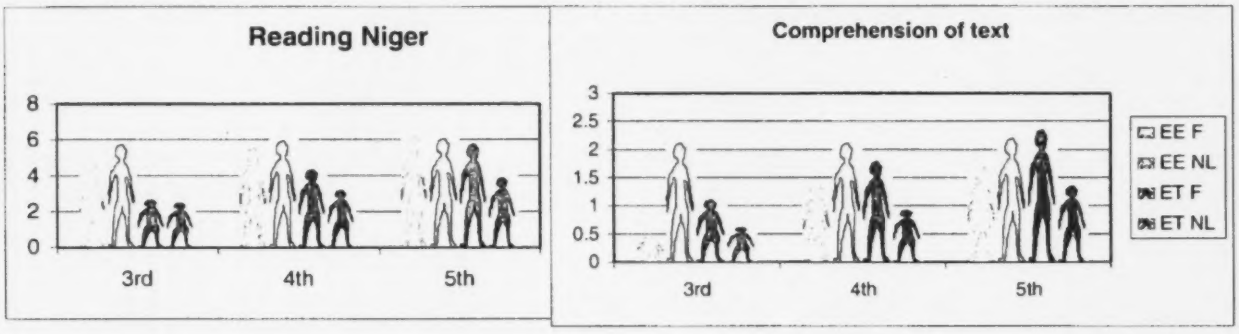
In reading we can see a great deal of progress in Guinea-Bissau, between 1st-2nd and 3rd- 4th grade (where the same test was applied). In the beginning and in their own language, EE pupils read better. EO pupils are not capable of reading at all in the first grade. In the 2nd grade this advantage is gone, while in 3rd and 4th the EE pupils stay behind. The early and abrupt transition from Creole to Portuguese hampers the learning of reading. In general, the mean reading capacity is very limited.

Reading test results (points out of 10) *and text comprehension test results in Niger* (points out 9) *per school type, testing language and grade*



In Niger EE-pupils read (and write; not shown) much better in their own language than their ET-peers, but – amazingly to us – they also read better in French, particularly in 3rd grade, where the influence of the teaching in the national language is still fresh. This is an important proof of the impact of bilingual education and proves the theories of common underlying proficiency and positive transfer of Cummins[1]: once you are able to read and write a language, you also have these skills in other languages which you understand. The key skill is – as shown by the graph at right – that you understand the language.

Note also, that even the contrary is true: ET pupils, who were taught in the official language, know how to read their own language at the same level as the official language (3rd grade), though they had never seen it before. The testing of these children in the

[1] Cummins, J. (1991) *Interdependence of first and second language proficiency in bilingual children*, Cambridge

national language caused some trouble among my colleagues. They originally refused to do the testing, because "these pupils surely won't understand one word of what is written". They were wrong.

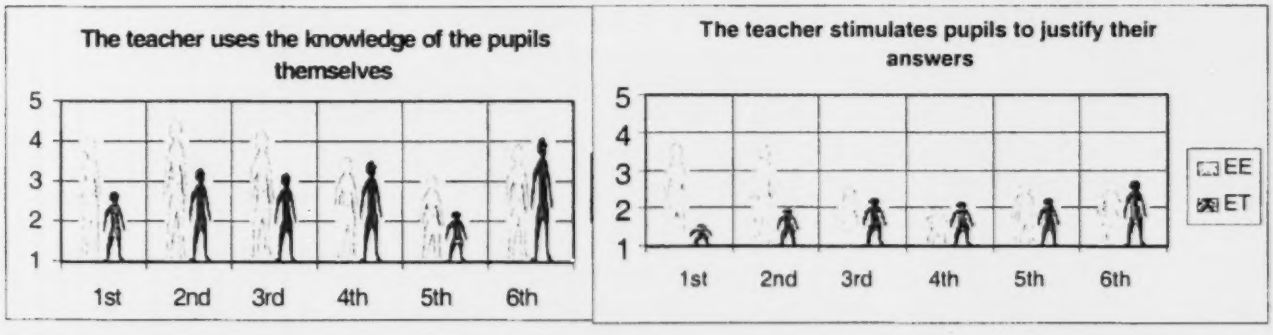
The success of the Niger experiment , compared to Guinea-Bissau, indicates that the earlier you start teaching the second language and the later you introduce it as medium of instruction, the better the school results are. Another condition seems to be that the transition to the official language in bilingual programs should be gradual.

1.1.2 Classroom observations

In both Guinea-Bissau and Niger we observed many lessons, in total more than 250. In Niger the observators noted on a scale from 1 (never) to 5 (always) how often certain a pedagogical behavior occurred.

The most striking difference between the two models of education was that in the bilingual schools there was more dynamic interaction between teacher and pupils as well as between the pupils themselves. The teaching was more pupil-centered, as shown in the two tables below for Niger. The differences are more important in the three lower grades where instruction is in the national language. Teachers also use much more open-ended questions and let pupils themselves find solutions for the posed problems. It seems that the use of the national language of the children permits the teacher to leave the inefficient path of rote 'learning'.

Interaction between teacher and pupils:
(occurrence on a scale from 1 (never) to 5 (always))

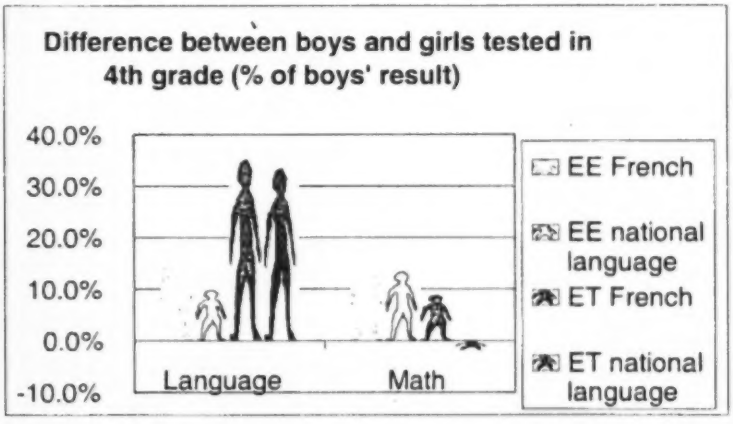


2 *What is the impact of bilingual education for girls?*

Earlier, more extensive research has shown that girls and children from rural areas are the most vulnerable groups in school. Fewer of them attend school. They repeat more often classes and abandon school at a younger age than boys from urban areas. In this section we work out the consequences of bilingual education on both vulnerable groups: girls and rural children. In this section we examine the results of girls.

In both Guinea-Bissau and Niger we found the same phenomenon: in nearly all tested subjects boys perform better than girls, but the difference between the two sexes is smaller in EE than in ET/EO. In Niger, for example, there is a significant difference between girls and boys tested in 4th grade ET, while this is lacking in EE. The graph shows the differences between girls and boys:

Difference between boys and girls in grade 3 in language and math test results, expressed in percentage of boys' performance



So, in the 4th grade of EE where the influence of bilingual teaching is still strong, girls are relatively better in language subjects than the boys; in other words, girls get more of an advantage from the mother tongue education. In math the situation is inverse: the girls in ET are relatively better, even in the absolute sense if tested in a national language.

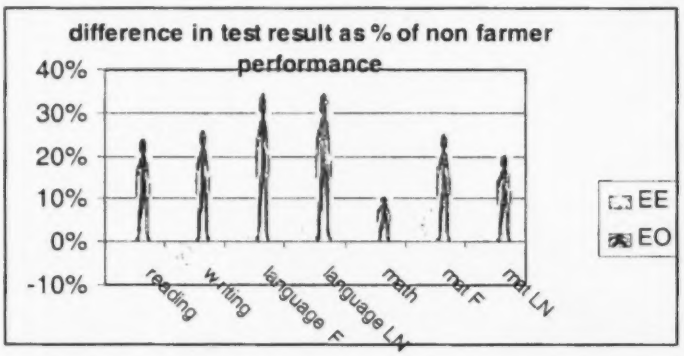
We can interpret these findings as a consequence of the difference in living space between girls and boys. Although we did not check this interpretation, we suppose that girls have less contact with the official (ex-colonial) language of the country, and that is why they have disadvantages when they enter school. They do not live a public life like boys do in the street or at public meeting points, and therefore they rarely hear the official language. They stay in the compound where they only hear other women and children, who speak only their own national language.

3 What is the impact of bilingual education on the children of farmers?

As often shown in other studies, we were able to prove that children of farmers have lesser school results. The graph shows that this is clear for language, but less obvious for math.

In the graph we distinguish 2 subgroups: children whose fathers are farmers, and others. In both countries the majority of the fathers are farmers. All other professions have higher revenues and status than a farmer does.

Differences in language and math test results for the 2 categories, (non farmer-farmer) in Guinea-Bissau[2] (reading, writing, math) and Niger[3] (language, math, French, Language National), expressed in percentage of non farmer's performance

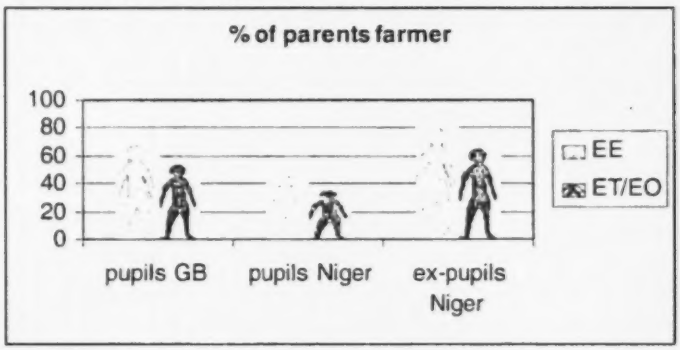


[2] 1st to 4th grade
[3] 3rd and 4th grade

The children of fathers with other professions score better than do children of farmers. This is confirmed by a lot of other studies. However, this last category differs less from the non farmers in the bilingual system than in the regular system, where only French or Portuguese is taught. In all subjects, farm or rural children take more advantage of an education that starts in the mother tongue or in a currently spoken language as in Guinea-Bissau.

There is an extra disadvantage for the sample of EE pupils, because farm children are over-represented in the bilingual (EE) system. The table shows this for the two study groups in Guinea-Bissau and Niger, and for the ex-pupils in Niger. Please, note that the farmer/housewife category for these ex-pupils in Niger contains children of all non-schooled workers (interviewed in our focused study) who completed EE or ET.

Representation of children of farmers in EE and ET



The reasons for this 'overcrowding' of children of farmers or non-schooled workers emerge from our interviews. In general, civil servants hesitate to send their children to a school 'in the language' (they mean EE) because of the fear that children will not learn the official language sufficiently. This language is considered to be the door of access to the civil service, the only source of well-paid jobs in either country. They stick to the school they know: the monolingual model in the high-prestige official language.

Secondly, the experimental schools are, in general, of recent creation. The experiment in Guinea-Bissau only existed for a period of ten years, from 1987 to 1997. In

Niger bilingual schools have lasted 26 years; however, most bilingual schools which are currently functioning in Niger, have started more recently. It is only after the regular schools finish their recruitment of pupils that these new schools can start taking pupils. Also, a lot of the old EE schools had poor over all results in the past, a factor that prevented effective recruitment. The consequence was that the bilingual schools became second-choice schools, meaning that they have been filled with *second-class* people: the children of the poor.

Finally, new experimental schools in Niger have been created on the outskirts of towns or in villages where there were no pre-existing schools. The Ministry of Education takes advantage of the donor money involved in these experiments to establish schools in locations where the government can not build them. In these areas one does not find the relatively better off civil servants; in the periphery of town or in the small villages you only find poor families of small farmers or petty traders.

The socioeconomic origin of the EE pupils is certainly an unfavorable factor in their learning process. In spite of this, their test results are relatively better than those of the regular system. The bilingual system permits the poorer children to overcome their disadvantage, which is the same phenomenon as we saw for girls in the preceding chapter. Since the large majority of Guineans and Nigeriens live in these unfavorable conditions, we can easily assume that bilingual education will significantly improve the output of the education system in these (and other) countries.

The conclusion stands: the school results of girls in bilingual schools in Guinea-Bissau and Niger are relatively better than those of boys. This is also true for the results of farmers, compared to better off families like civil servants. School that starts in their own language is an improving factor in the learning process of farmers daughters, probably because their lack of contact with the official, international, language.

Most countries and international organizations opt for the improvement of girls schooling, because this appears to be one of the most determining factors in the social

and even economical development of a country. Also, more and more international cooperation focuses on the poor, particularly rural people. Although the introduction of bilingual education often meets political resistance, this could yet be overcome by linking it to the improvement of schooling for girls and rural people.

Nijmegen, Netherlands, January 15, 2002

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